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Informed consent in research ethics: An analysis from the perspective of Luhmann's social systems theory

Abstract.

We explore the origins and dynamics of ethical communication with reference to the requirements for informed consent provision in research ethics. We adopt the analytical framework developed in Luhmann's social systems theory to illustrate how ethical communication about informed consent has developed in the medical, legal and scientific systems. We would like to suggest that the development of ethical communication is the result of the developing semantics of individuality and personhood. Our analysis adds specific observations about how communication about research ethics, and informed consent specifically, reduces complexity in an increasingly functionally differentiated society.

Key words: Informed consent, Luhmann, ethics, human subject.

Introduction

We set out to demonstrate how Luhmann's understanding of ethical communication, which "designates the conditions under which esteem and disesteem can be communicated" (Luhmann, 1996; pg 29), can help us understand the dynamics of research ethics with specific reference to informed consent. In taking the example of informed consent we do so in recognition that it is widely seen as fundamental to medical and research ethics. Respect for autonomy is the most frequently mentioned moral principle when it comes to a discussion on informed consent (Faden & Beauchamp 1986). It is rooted in the liberal Western tradition which emphasises the importance of individual freedom and choice. The most cited definition of autonomy, a contested term in its own right, follows Kant ([Kant, 1953](#)). For Kant, autonomy means self-regulation, and involves acting in accordance with one's true self. Autonomous people are ends in themselves, possess an intrinsic value, and determine their own destiny. Respect for autonomy is regulated through informed consent practices which are often set up as an 'ethical panacea' and a 'tool to counter autocratic and paternalistic medical practices' (Corrigan, 2003 pg 768).

This concept of informed consent generally is not without criticisms. For example, concerns are raised by Corrigan (2003) who argues the concept of consent is 'empty' ethics which assumes a direct and linear model from adequate information to the conscious decision whether to participate. Such a process does not, for example, recognise that autonomy is not so much an idea or concept, but a set of practices: 'relations of self to self and self to others, ... contested, involving relations of subordination and privilege' (Rose 1989 pg 94).

The difficulties raised in these critiques pose interesting questions about the development of the concept of informed consent and its elevation to a fundamental condition for the treatment or inclusion of human subjects. In what follows we aim to explore the evolution of informed consent using the work of Luhmann, specifically his theory of ethics and his historical analysis of the development of language in society. We refer to some of Luhmann's original texts in this process, but essentially, we are interpreting his ideas and using the work of other key commentators who are influenced by Luhmann's theory of social systems. In order to achieve our aims we take key events in the medical, legal and scientific systems which suggest that the development of consent has much to do with the increasing functional differentiation of society. Throughout this paper we refer to and define key terms. As such, it is first necessary to outline briefly what Luhmann means when he discusses ethics and the distinction between ethics and morals.

Luhmann: distinguishing morals from ethics

In discussing morals Luhmann starts with Durkheim; moral observations presuppose a distinction between rules and actions (Luhmann, 1996) which in turn are dependent upon an empirical reference and for Luhmann the empirical frame of reference is communication and not consciousness. Durkheim and others would assume that the distinction between good and bad would be a good distinction. However, Luhmann argues that moral communication is framed with a binary code which opposes positive and negative value and is invariant. It also does not contain any information about what is good and what is bad and

the values are interchangeable (for example an evil act may also be a good act under different conditions). Therefore, the moral needs criteria to decide which behavior is good and which is bad.

Criteria, or programmes, are variable and change historically. Following the decline in religious morality modern society is marked by the individualisation of moral reference, by an emphasis upon inner conviction and self-motivation rather than external coercion. And whilst nobody can avoid the moral implication of her statement we can choose the programmes that favor our own interests. Therefore, the language of 'values' is best suited to moral descriptors and are stable because they are ambivalent. Luhmann argues they are a 'semantic cover for unresolved conflicts' and therefore, we require 'legitimation by procedure' (1996 pg 32)

So the moral is a specific distinction with two sides: good and bad. Such an opposition can never be reduced to a unity except in the form of a paradox (Luhmann 1993). As a paradox, the solution to the problem would cancel the problem and eliminate the distinction between the problem and its solution and bring moral communication to an end. Therefore, argues Luhmann 'We need the problem for what can be called self-renewal or 'autopoiesis' of moral communication. Furthermore, if we want to have reasons why the problem cannot be solved, we have to observe its carefully hidden source – the paradox' (Luhmann 1996 pg 33)

Decisions between conflicts in values when they do occur, and Luhmann argues that they only occur in the event of a conflict, are made in subsystems or by individuals on an ad hoc basis. This does not mean that the moralization of communications is arbitrary. There are structurally determined occasions for moralization, but essentially moralising communication occurs as an 'alarm system' (Luhmann 2012 pg 244) which emerges when urgent social problems arise which cannot obviously be solved through symbolically generalized communication media and the corresponding functional systems. Therefore, moral communication arises for serious problems and where 'disquieting realities are apparent' (2012 pg 244), which cannot be overcome through other processes. The code of moral communications, in terms of rules or programmes, are 'no longer amenable to consensus. Therefore, morality takes on 'polemogenous', war-generating traits: it arises from conflicts and encourages conflicts' (2012 pg 244).

Most social systems do not need to communicate morally, in part, because moral distinctions, good/evil, do not correspond to any of the basic codes of function systems (for example true/false). Social systems do not need to communicate morally because the subjective moral distinctions, good/evil does not provide the kind of certainty that is necessary for these systems to perform their function which is enabling the transmission of meaning through communication. Rather they use codes, such as lawful/unlawful (the legal system), well/sick (medical system), power/no power (political system), and true/false (science system). The fundamental codes of function systems are 'amoral' but their communications can invoke moral codes to justify decisions. From this

perspective morality is understood in connection with the operations of communication systems and is a particular type of communication for processing information on esteem or disesteem. Once engaged in moral communication one automatically identifies with the positive side of the esteem/disesteem distinction.

Ethics, on the other hand, is distinct from morals and speaks to an illusion that there are rules for dealing with scandals and suggests a 'place that does not exist' (Luhmann 2012 pg 245).

Ethics was a response to increasing social complexity produced by functional differentiation (Luhmann 1996). It is an academic discipline concerned with laying the foundation for moral judgements with the assistance of theoretical constructs, for example utilitarianism and value ethics. It can refer to different things according to Luhmann, for example, in the old European tradition, the issue was 'a didactic description of ethos, of human beings being well constituted, and of inscribing or textualizing the moral' (Luhmann 1992 pg 1007). Since the Middle Ages, ethics has been concerned with 'individual (internally motivated) conduct'. During the eighteenth-century ethics was reformulated as a theory of the rational foundation of moral judgements.

The important point for ethics, argues, Luhmann is that they do not analyse the moral externally but operate as a theory of moral reflection; 'Ethics engages itself for the good, opts against the bad, and hence views itself as licensed to hold the moral to be something good' (1992 pg 1008). Moral communication, on the other

hand, does not differ from other forms of communication by referring to a certain set of principles. Morality is not the application of rules that are justified by reason, it is not a norm, but is a coding based upon the difference between respect and disrespect and which regulates the corresponding practices. In other words, there is not intrinsic moral quality and no good or bad people, only the possibility of indicating people as good or bad.

To understand how Luhmann's theory of ethics can illuminate the evolution of the concept of informed consent we need to also understand what he meant by communication and social semantics. It is to a description of these concepts that we now turn.

Luhmann and social semantics

Modern society, argues Luhman, is characterized by operatively closed and functionally distinct sub-systems, such as law, science, education, health. Systems are, in Luhmann's term, autopoietic, which means that their reproduction and perpetuity is sustained by their own internal operations through which they reduce the complexity of their environment. The process of differentiation is that of 'reproducing systems within systems, boundaries within boundaries' (Luhmann 1997 pg 71). Boundaries are generated by a 'self-referring network of communications on the inside, and everything else (including human bodies and minds) on the outside' (Luhmann 1997 pg 72). For Luhmann communication is understood as the basic unit of social systems. Communication consists of information, message and understanding and is an occurrence, specific to a particular system, at a particular moment, which

generates meaning. Most importantly, it does not concern individuals. As Luhmann argues:

‘the word ‘human being’ is not a human being. In fact there is nothing in the unity of an object that corresponds to the word. Words such as ‘human being’, ‘soul’, ‘person’, ‘subject’ and ‘individual’ are nothing more than what they effect in communication (Luhmann 2002 pg 182).

So, communication is a basic unit of social systems and systems generate communication according to their codes of self-reference. When communications are preserved they subsequently act to enable further communication about the problem being referenced. Science, for example, is ordered by a coding of differences between true/false. The observations of science therefore, ‘arise from conception of reference and of truth as a form... reference itself is nothing but the achievement of an observational designation’ (Luhmann 1994 pg 12). If communications link around establishing whether something is an illness or a health condition they have meaning for the medical system. If they link around whether something is legal or illegal they relate to the legal system. When a communication occurs the reference problems which form the background to every communication cannot ‘be deduced theoretically and they are not ahistorical” (Gibson and Paul, 2014). Communication facilitates the production of meaning by reducing complexity and contingency (Luhmann 1996).

Semantics are understood as accumulated and condensed forms of meaning that are made available for us to draw on at any time when we seek to communicate (Andersen, 2003). They are compressions of communication whose meaning is

confirmed and enriched by repeated use. They are established over long periods of time when one communication links to another leading to the repetition and condensation of meaning around key distinctions that help organize communication about particular reference problems in society. When they are preserved they subsequently act to enable further communication about the problem being referenced. For example, if communications link around health and illness they have meaning for medical systems. If they are legal communications they have meaning for the legal system. Semantics is the understanding of 'things' or the 'world' and can be both common semantics and 'cultivated semantics' and are expressions of the semantics of a society. So whilst social semantics and social systems resonate with each other there is no strict causal relationship.

Applying these ideas to the problems associated with ethical communication in society involves exploring the semantic history of the underlying reference problems that have served to shape communications about ethics. This means exploring the degree to which communications about ethics can be attributed to scientific, medical, legal or political understanding of the issues. In taking informed consent as an example, communication on consent has increased at key moments. We will argue that this appears to have occurred because of problems that different subsystems of society have had to confront. These happen at different times with differing consequences for ethical communication in these systems.

We would argue, following Luhmann and others (Nassehi et al., 2008, Schirmer and Michalakis, 2011, Gibson and Burr, 2014), that there is no simple process of direct structural determination of one system on another, but that the relationship between these different forms of ethics communication is a product of the structural coupling between different systems. However, before discussing the idea of structural coupling, we would like to give some examples of how ethical communication about informed consent has developed in the medical, legal and scientific systems as the result of distinct system dynamics. We want to illustrate that prior to the emergence of informed consent as a concept there are numerous interesting ideas that reveal much about ethical communication in the practice of medicine prior to the 20th Century.

Ethical communication and the medical ‘professional’

Whilst Hippocrates wrote of the importance of etiquette John Gregory in his ‘Lectures on the Duties and Qualifications of a Physician’ (1724 – 1773) and Percival, in ‘Medical Ethics’ (Percival, 1803) are generally regarded as the first publications on the subject of medical ethics. Both include a number of general reflections which suggest that morality is part of the esteem associated with being a *gentleman* when outlining the qualities of physicians. Their pronouncements were designed to enable the conferment of esteem on medical practitioners. In association with these qualities Percival also talked about trust and the principle of beneficence, of doing no harm.

The principle of doing no harm appears in the first code of ethics, the 1847 American Medical Association Code of Medical Ethics. Article 4 states:

‘A physician should not be forward to make gloomy prognostications ...
the physician should be the minister of *hope* and *comfort* to the *sick*’
(American Medical Association, 1847).

In other words, the physician should withhold the truth from her patients in the interests of doing no harm.

The preliminary duties of the physician were also tied closely to the: ‘Obligations of patients to their physicians’. Under article 6 it stated that ‘the *obedience* of a *patient* to the *prescriptions* of his *physician* should be prompt and implicit. He should never permit his own crude opinions as to their fitness, to influence his attention to them’ (American Medical Association, 1847). These communications reveal the conceptual history of what Parsons would later recognize as role reciprocity in the doctor patient relationship (Parsons, 1975; Gerhardt, 1989).

It is not until 1849, when Hooker published ‘Physician and Patient’ (Hooker, 1849), that we find a challenge to the notion that doctors should conceal the truth from patients. In Hooker we find the first attack on the medical profession for their apparent stance on truth telling. Hooker argued that: ‘The question that presents itself is not ... whether the truth shall in any case be *withheld* [italics in original] but whether, in doing this, real *falsehood* is *justifiable*’ [italics added] (Katz, 1972 pg 360).

From the perspective of social systems theory this allows for second order observation so that an observer is able simultaneously to view both sides of the distinction truth revealed/truth not revealed as possibilities around which discussion about ethics can develop (Luhmann, 1995). This in turn allows an increase in the complexity of ethical communication. In this example truth telling could be both justified and unjustified and as constituting both benefit and harm, albeit under different conditions, which could be identified and discussed in further communications. The development of communications at the second order of observation with observers observing decision-makers increases the complexity of communications to reflect an ever-increasing complexity in the social environment (Luhmann, 1995). In what follows we discover how second order observation in medicine results in ethical communication and how the legal system was called upon to resolve the resulting complexities in medical ethics.

Complexity and the emergence of informed consent in medicine

Withholding the truth so as not to make *gloomy prognostications* was part of the generalized process of doing medicine. The doctor's duty was to act upon the patient's body and the patient's duty was to *passively* receive treatment.

All this begins to change in 1767 when communication on consent in the legal system develops. In 1767 in England in the legal case *Slater v. Baker and Stapleton* Slater had hired Drs. Baker and Stapleton to remove bandages from a partially healed leg fracture. However, and with apparent disregard for Slater's protests, the doctors re-fractured his leg and placed it in an experimental

apparatus to reset. The judge stated that ‘it is *reasonable* that a patient should be told what is *about to be done to* him, that he may take courage and put himself in such a situation as to *enable him to* undergo the operation’ [italics added] (*Slater v. Baker*, 95 Eng. Rep. 860 – Supreme Court 1767 Id. at 862).

In this legal case we can see the beginning of a shift in medical practice away from treating patients as people who simply receive treatment determined by their physician, to one where people are permitted to participate, at least to some degree, in decisions about their treatment. We note that the patient was nonetheless still the recipient of the ‘medical gaze’ as part of a process that involved deciphering and reading the physical body and the symptoms of pathology (Foucault, 1963).

Whilst there are other legal cases raising issues about the role of the patient in decisions about their medical treatment, it is not until 1903 that there was the first of several key US legal cases in which consent was openly discussed. In the first of these, *Rolater v Strain*, the patient, Rolater, had consented to an operation to drain an infection in her foot, but had specifically requested that no bone was to be removed. The physician removed bone from her toe despite her instruction. The court held with the plaintiff that the operation was not conducted in the manner consented to (Faden and Beauchamp, 1986 pg 123). The judge stated that the:

‘Consent of the patient, either expressed or implied, is necessary to authorize a physician to perform a surgical operation upon the body of

the patient. An operation without such consent is wrongful and unlawful’
(*Rolater v Strain* 1913 OK 643: 1913: Oklahoma Supreme Court [02]).

As we have seen prior to 1900 communication about ethics in medicine was framed in terms of a ‘clinical reading’ of the patient in which the patient was a passive receptacle of pathology and treatment. A key reference problem in those communications involved the distinction between benefit and harm. This was often achieved by withholding the truth so as not to cause distress to the patient. Yet clearly there was a degree of legal conflict between telling the truth and concealment. In *Rolater v Strain* the distinction contains a very different reference problem. Action upon the body of another, without consent, was deemed to be unlawful. The court went on to state:

‘the free citizen's first and greatest right, which underlies all others--the right to the inviolability of his person, in other words, his right to himself--is the subject of universal acquiescence’ (*Rolater v Strain* 1913 OK 643: 1913: Oklahoma Supreme Court [1]).

We find here much more complex distinctions associated with the requirement of consent. These serve to further ‘animate’ the notion of the patient as an active recipient of care. To consent, a patient needs to be free, to have a sense of belonging as a citizen and possess a right to bodily integrity. We can recognize here changes in the underlying status of patient-hood that others have already highlighted (Foucault, 1963, Armstrong, 1984). Armstrong argued that the meeting between the doctor and patient was no longer between the interrogating medical gaze and the passive patient but was in the process of

becoming 'an interaction between two subjects' (Armstrong, 1984). Throughout the development of ethical communication in medicine we can find further events which cause 'irritations' within the health system. Each time that these 'irritations' appear we can observe the evolution of medical ethics and the effect of legal decisions on that evolution. So, whilst the patient may begin to be treated as a more active agent in their medical treatment the catalyst for change appears to be legal decisions.

To illustrate this process further we would like to discuss two other widely cited cases. The first is the 1914 US legal case *Schloendorff v. Society of N.Y. Hospitals*. Here the physician removed a fibroid tumor. The patient had only consented to being examined under anesthesia, specifically requesting not to have an operation (Faden and Beauchamp, 1986). The case eventually became widely cited as a classic statement of a patient's right to self-determination (Faden and Beauchamp, 1986 p. 123, Katz, 1972, Katz 1998) in which it was stated that:

'Every human being of adult years and sound mind has a right to determine what shall be done with his own [sic] body' (*Schloendorff v. Society of N.Y. Hospitals*. (105 N.E. 92) [4]).

The *Schloendorff* Case is now considered perhaps *the* landmark case in pioneering 'self-determination' as a principle in law. It is here that consent became established as an important concept (Faden and Beauchamp, 1986). Closer analysis reveals an increase in complexity whereby the issue of consent becomes associated with age and soundness of mind. This leaves the way open

for further communications as to how these concepts should be interpreted and applied within other systems, for example medicine.

The second case is the 1957 a US case *Salgo v. Leland Stanford Jr. University Board of Trustees*. Here the physician had recommended an aortography to identify the location of a suspected obstructed abdominal aorta. The procedure would involve the injection of a dye and had not yet become routine procedure. Salgo, the patient, suffered permanent paralysis because of the intervention. Paralysis was a risk of such a procedure but in this case the physician had not warned the patient (Katz, 1998). This is widely acknowledged to be the first case to use the term 'informed consent' (Faden and Beauchamp, 1986). Here the judge stated:

“One is to *explain* to the patient every *risk* attendant upon any surgical procedure or operation, no matter how remote; this may well result in *alarming* a patient ... in discussing the element of risk a certain amount of discretion must be employed consistent with the *full disclosure of facts* necessary to an *informed consent*.” [italics added] (*Salgo v. Leland Stanford Jr. University Board of Trustees, 154 Cal.App.2d [5b]*).

We would argue that these legal decisions acted as irritants for the evolution of the concept of consent in health and in rules and principles in medical ethics. Yet the communications in research have a different dynamic and subsequently different semantics.

Principles of consent in research

Ethical communication concerning consent in research is closely related to historical controversies and as such developed different semantics that are closely related to science as the underlying reference problem. The 1947 Nuremberg Code arose out of the human experiments conducted by the Nazi's during the Second World War and is considered a pivotal point in the history of consent in medical research (Faden and Beauchamp, 1986). The Code consisted of ten principles approved by the tribunal for distinguishing between lawful and unlawful medical research on humans in response to the defense arguments at Nuremberg that Nazi doctors were not doing anything unlawful (Annas and Grodin 1992).

The Nuremberg Code subsequently become established setting out the medical standards and principles for human experimentation (Grodin, 1992). It opens with an unequivocal statement of the status of consent in human experimentation:

‘the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force ... and should have sufficient knowledge and comprehension of the elements of the subject matter involved, as to enable him to make an understanding and enlightened decision’ (The Nuremberg Code 1947).

Faden and Beauchamp (1986) argued that the Nazi atrocities would have appeared to be the ‘single most important causal factor’ in the emergence of informed consent in human experimentation (Faden and Beauchamp, 1986 p

186). However, they also state that the experiences in Germany appeared to have no major effect on informed consent in psychology and the social sciences. Articles in journals in personality and social psychology in 1948 suggested that 18% had reported the use of deception, and this had increased to 38% by 1963 (Faden and Beauchamp 1986 p 172). In 1953, four years after the Nuremberg Code, the American Psychological Society code of Ethics was published. The reference to consent was as follows:

‘When a reasonable possibility of injurious after effects exists, research is conducted only when the subjects or their responsible agents are fully informed of this possibility and agree to participate nevertheless’ (Katz, 1972 pg 315)

Consent was only required if there was a likelihood of injury. The principle set out in social science did not follow the same form apparent in Nuremberg, where principles of consent drew distinctions between freedom/coercion, choice/coercion, information/lack of information.

To further analyse how the principle of informed consent evolved in the social and behavioural sciences post Nuremberg we look to the first of a series of events in the social sciences beginning with the Wichita Jury Recording Case in 1954. This involved a group of lawyers and social scientists, who recorded the deliberations of juries in six civil cases in the United States district of Wichita, Kansas. The jurors did not know that they were being recorded. The research became public knowledge and the Internal Security Subcommittee of the Senate Committee on the Judiciary held public hearings to assess the impact of the

research 'upon the integrity of the jury system [which is protected by] the seventh amendment of the Constitution' (Katz, 1972 pg 67 insertion in the original). Ruebhausen and Brim (Ruebhausen and Brim, 1966) were key commentators at the time. They stated that:

'The right to privacy is, therefore, a positive claim to the status of personal dignity – a claim for freedom ...The essence of the claim to privacy is the choice of the individual as to what he shall disclose or withhold, and when he shall do so. Accordingly, the essential privacy-respecting ethic for behavioral research must revolve around the concept of consent'

(Ruebhausen and Brim 1966 p 430).

In this statement 'privacy' as a concept developed in communication about consent and this was directly linked to personal dignity and freedom. This link was also evident in two further events which occurred. This includes Milgram's research on obedience, first published in 1965 (Milgram, 1965). The results suggested the conditions under which subjects transfer responsibility to authority and Milgram was criticized for using deception (Faden and Beauchamp, 1986).

The second event is Humphreys' Tearoom Trade (Humphreys, 1970). This study also included deception and involved observation of sexual acts in public toilets followed by interviews where Humphreys disguised himself as a health service interviewer. Humphrey's work was highly criticized for violating the subjects' right to privacy.

Here we have a communication in which distinctions between privacy and self-determination, withholding information and consent are evident and different from those we have analyzed in medicine. The events in medicine and medical experimentation have paved the way for the emergence of consent in social and behavioral sciences but the principles associated with consent have different forms. What is interesting is that it's the press that have taken this and transferred it from communication in science to the 'turmoil of scandals' (Luhmann 1997 pg 76). The way this communication developed does not suggest a deterministic relationship. Rather what we have is a different set of reference problems leading to different underlying dynamics in social and medical science. This brings us to the concept of structural coupling and the relationships between the legal system, medicine and science.

Structural coupling: consequences for informed consent

The concept of 'structural coupling' is the simultaneous co-evolution of communication systems in such a way that the communications of one become reconstituted within the other. Structural coupling establishes specific mechanisms of irritation in systems, for example, property and contract are part of the legal system and these communications cause irritation in the legal system. The irritation means that the system has to respond to changes in its environment. Given that we live in what Luhmann terms a functionally differentiated society it is no longer a requirement that function systems are compatible with each other.

Our analysis indicates the relevance of structural coupling between the legal system, medicine and science. The Nuremberg Code can be seen as communication emerging from the legal system which is structurally coupled with science. Consent therefore, is copied from one system to another, but what is interesting in our analysis is that the forms that this has taken are different according to the demands and requirement of different systems. The case of the Wichita Jury Recording Case in 1954 is a good example of how this 'irritation' has occurred. The provision for consent in psychology was evident in our analysis prior to Wichita in the 1953 American Psychological Society Code of Ethics but only 'when a reasonable possibility of injurious aftereffects exists' (Katz, 1972 p 315). Reference to consent reflects the 'irritation' caused by the proliferation of communication about consent in other systems and it is perhaps not surprising that we see consent mentioned in behavioural science as a subsystem of science. However, it wasn't until the controversy over Wichita, followed by Milgram and Humphries, that explicit communication *media* about consent to withhold personal information became apparent. These events are internal to psychological research and take a different form to the discussion on consent that we have analyzed in the systems of law, medicine and indeed, the subsystems of science.

Additionally, the findings of this analysis direct our attention to important aspects of the development of ethical communication not covered by previous analyses. There has been an increase in communication about consent and ethical communication generally and we would like to suggest that this has much to do with the dynamics of a functionally differentiated society and the

developing semantics of individuality and personhood. To understand this further we need to introduce how Luhmann explains the genealogy of modern functionally differentiated society which is central to his analysis of the human subject.

The semantics of personhood and consent as a technology.

Luhmann's analysis is evolutionary; he traced a genealogy from pre-modern society, where the individual was defined by its social position, protected by social bonds of religion and family, to a modern functionally differentiated society. He saw pre-modern societies as organized into equivalently structured subsystems, where people were defined by their inclusion in a social stratum or a household, and where there was relatively little interdependence (Verschraegen, 2002). In modern society however, society is re-organised around forms of social function and interaction that cross cut social hierarchies (Luhmann 2012) and the position of the individual has become more problematic as the personality of the individual is no longer defined by fixed roles. With functional differentiation social positions no longer determine one's position in society. Rather one can 're-enter' society in different roles: as a voter; a patient, a student and so forth, in a variety of partial inclusions and where no system allows for the integration of these different selves into a whole. The semantics of individuality are a reaction to functional differentiation and conceive of the individual as standing outside of the social order. The semantics of the 'human subject' compensate for the demise of older forms of identification and inclusion. We think Moeller puts this very well when he argues that: 'the shift of the semantics of individuality from social inclusion to the peculiar social

exclusion-inclusion of the “subject” (Moeller 2006 pg 88). In this way, argues Luhmann: ‘modern values, such as equality and freedom, serve as cover terms to preserve an illusion of innocence-equality as equal opportunity and freedom as allowing for individual (and not societal) attribution’ (Luhmann 1997 pg70). And following Luhmann Moeller argues that the semantic ‘counterweight’ to the restraints and inequalities caused by the partial inclusion of the individual by functional systems is human rights.

Human rights emerge as a key moment in modernity in the move to a functionally differentiated society. They are not viewed by Luhmann as universal absolutes celebrating and defending the intrinsic worth of the individual but as depending upon the internal operations of function systems and the ability of the individual to access these systems. Although ‘rights’ can be challenged in the system of law, all this does is bring into play the legal system’s own interpretation and implementations of rights. What evolves, for Luhmann, is not progress to more individual freedom, more respect for personhood, and so forth, but rather the ways in which people are constructed as historically contingent semantic artefacts by society’s function systems. These ideas, as Moeller argues, do not transcend our functional existence, they ‘help us to make sense of our social existence – as meaningless as they may factually be’ (Moeller 2006 pg 95).

We are arguing that communication on consent has evolved with the increased differentiation of society and the developing semantics of individuality and

personhood. At the same time, communication on informed consent has also become 'technisized' (1993 pg 1003).

Technology has a specific definition in Luhmann which we argue fits with informed consent as a 'functioning simplification' (Luhmann 2012 pg 317). Luhmann argues that early understanding of technology incorporated the application of knowledge about nature to human ends. This association has traditionally set up the opposition between technology and humanity and the characterisation of technology as the source of alienation and as a 'necessary evil' (Luhmann 2012 pg 315). In contrast, Luhmann argues that this understanding is obsolete. His example in his book *Risk* (1993) is that of commercially produced organic potatoes which are no more understood as 'natural' than genetically modified ones. So, rather than the distinction between technology and human, Luhmann argues the distinction in technology is between controllable and uncontrollable and the reduction of complexity.

Technology operates to make possible the coupling of heterogeneous elements and is 'the isolation of its operations from an interfering charge of meaning' (Luhmann 2013 pg 243). It allows the coupling of completely heterogeneous elements in a reliably repeatable manner, the advantages of which include:

'the determinability of errors-be they in design or in operation; the limitability of input to what is needed, thus the planability and rationalizability of resource allocation; and, finally and above all, a certain degree of intrasystemic control over external relations that the system

sees, with the conversion of risks of differentiation into risks of technology' (Luhmann pg 319).

In other words, technology operates to isolate and close off operations from external influences so that they can repetitively and predictably perform as they should with the predicted outcome. We argue the informed consent operate like this and alleviate the burden of causal forces which are excluded from decision making processes.

Herein however, lies the paradox of informed consent; it has evolved in response to complexity, differentiation and the developing semantics of individuality and personhood but nonetheless, it operates to exclude all these things in the process of obtaining it. It is a functional simplification in which the complexity of the world is reconstructed as a simplified set of causal relations.

Conclusion

Through our semantic analysis of communication on informed consent we have argued that this concept has evolved through increased complexity in communication in medicine, legal and science communications. There is no simple process of direct structural determination of one system on another. Structural coupling between systems results in informed consent taking different forms according to the demands and requirements of different systems.

Ultimately, increased functional differentiation and the transformation of legal communications, have evolved into principles commonly recognized in research ethics codes of practice and principles. In most regards however, there is little, if

anything, that is ethical or moral in the communication we have analysed. Rather we would argue that the increase in communication about consent has more to do with the dynamics of a functionally differentiated society and the evolving semantics of personhood rather than reflecting our intrinsic worth as individuals. Following Luhmann, our worth, such as it is, is an historically contingent semantic artifact brought about by society's function systems. In this regard, the criticisms we opened our discussion with are particularly pertinent. As Corrigan (2003) argued, the concept of consent is empty but not, we would argue, for the reasons she identified. It is empty because our worth as autonomous individuals is empty.

The process of informed consent, we argue, is essentially a technology in the Luhmannian sense. It reduces the complex, it guarantees that operations can be repeated, it excludes the individual and 'saves the always difficult and conflictual coordination of human actions' (Luhmann pg 313). It is a standardized and closed process designed to produce predictability in an otherwise contingent world.

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